SHRI S. RAMACHANDRAN PILLAI: Sir, I had asked whether the present Crop Insurance Scheme covers all the crops or not, I also wanted to know how many of the aspects, stated in the National Agriculture Policy, are covered by the New Agriculture Insurance Scheme. The hon. Minister has not replied to my these specific questions.

श्री श्रीपद यस्सोनाईक: जैसा मैंने पहले बताया है ऐग्रीकल्चरल पालिसी के इंप्लीमेंटेशन में थोड़ा टाइम लगेगा, इसके इंप्लीमेंटेशन में कई वर्ष लगेंगे।

MR. CHAIRMAN: He has put a specific question as to which crops are included in the Scheme. You have not replied to that question.

श्री श्रीपद यस्सोनाईक: इस स्कीम के अंतर्गत सभी फूडग्रेन्स को इन्क्लूड किया गया है ...(**व्यवधान**)

MR. CHAIRMAN: Now, next question.

श्री रमा शंकर कौशिक: सभापति महोदय, इस पर आधे घंटे की चर्चा स्वीकार कर लीजिए।

श्री श्रीपद यस्सोनाईक: जो हमारी हार्टिकल्चर क्रॉप्स हैं, जो ईयरली यील्ड देती हैं, उनको नेशनल इंश्योरेंस स्कीम में शामिल किया गया है। कई पेड़ और झाड़ जैसे काजू, आम, इनकी लाईफ 20-30 वर्ष होती है, इसलिए इनको इसमें शामिल नहीं किया गया है ...(**व्यवधान**)

श्री मूल चन्द मीणा: महोदय, यह लोगों से जुड़ा हुआ सवाल है।

श्री सभापति: इस पर हाफ-ऐन-ऑवर डिस्कशन दे देंगे।

Observatory in Laddakh

*364. SHRI B. J. PANDA: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) what is the project cost of the observatory in village Hanel in Laddakh and by when it is going to be completed;

(b) what are the main features of this observatory;

(c) whether there is any scheme to expand the observatory; and

(d) if so, the details thereof, including cost estimates and time schedule for completion of the project?

THE MINISTER OF SCIENCE AND TECHNOLOGY (DR. MURLI MANOHAR JOSHI): (a) to (d) A statement is laid on the Table of the House.

Statement

Indian Institute of Astrophysics has established a state-of-the-art and world's highest astronomical observatory with a 2-meter class optical/infrared telescope at Hanle, South-Eastern Laddakh. The cost of the project for setting up the high altitude astronomical observatory is Rs. 38.49 crores. The setting up of the Observatory has been completed. The telescope has already received its first astronomical image on the night intervening 26/27 September, 2000. The main features of the Observatory are: (i) the site at Hanle has good accessibility round the year; (ii) the telescope, its four focal plane instruments, and the dome are remotely controlled from Hosakote, Near Bangalore, through a dedicated satellite communication link in the INSAT series of satellites, making it the first remotely operated astronomical observatory in the country; (iii) the telescope incorporates the latest technological developments in the field of telescope fabrication. Most importantly, the instrument is a new advanced technology telescope and incorporates short focal ratio (f/1.75 primary mirror; f/9 Cassegrain), ultra-low expansion mirror and is able to withstand the low temperatures in Hanle (-30 degrees Centigrade), and provide high image quality, superb pointing and tracking accuracy.

A proposal for setting up of a Himalayan Binocular Telescope at Mt. Saraswati, Hanle, Laddakh has been initiated for inclusion in the Tenth Five Year Plan at an estimated cost of approximately Rs. 150 crores.

SHRI B. J. PANDA: Sir, in the statement, elaborate details about the sophistication and the capability of the observatory have been given. One of the ironies of our nation's scientific capability and scientific development is that often, we have the state-of-the-art research and scientific capability in the country but, at the same time, we have often demonstrated lack of ability to translate that scientific knowledge into benefits for the masses. For example, we are one of the few nations that have the capability of having launched satellites into space. And yet, even in the 21st Century, we have one of the lowest penetrations of telecomunication services in the world. Sir, in this context, I would like to know whether large investments, one of which amounts to more than Rs. 38 crores and another one to Rs. 150 crores, which are referred to in the answer have the potential to provide significant benefits to citizens across the country or they are just contributing to observatories, which are nothing but white elephants. In this context, I would like the hon. Minister to let us know the main objectives of such observatories. Will they address to issues

such as climatic changes and predictive capabilities for situations like cyclones and other climatic calamities? We in this country also suffer from situations like holes in the ozone layer which are caused by industrial developments. Most of these situations have taken place in other countries. I would like to know whether such observatories would have the capability to make such predictions which would benefit the country.

DR. MURLI MANOHAR JOSHI: Sir, the issues raised by the hon. Member do not arise out of this question. This question is purely related to a very important equipment which is located at the highest altitudes in the world. It is perhaps the only telescope located at such a high altitude. It is an institution which is working in the field of fundamental research. The institutions engaged in applied research work, attend to all problems relating to climate, like forecasting of super-cyclones or other climatic changes. Let me tell you, Sir, that this instrument is made to explore the Universe. You would be happy to know — you are yourself a scientist — that this is the picture of 'Crab Nebula' which has been photographed by the scientists. I can show it to you. I can keep it here, if you so like. This is another picture taken by this instrument. This is the first photograph taken by this instrument which is used to explore the Universe. It is an instrument, which is primarily used for high astronomical fundamental researches. Nevertheless, the Co2 monitoring is done in Hanel. And for green house gas, one of the stations in the world is in Hanel. So, these are also the problems which it will attend to. But, the major part of this is to act as an instrument for fundamental research. The reason for locating it at Hanel is that it is at a very high altitude and has a very wide sky. There we can work throughout the year. So, it has the facilities, which are internationally recognised. Therefore, we must be happy about it. Investments on it indeed are needed. If you want to work on building satellites, will you not invest in the space research? How can you launch a satellite, if you do not invest several hundred crores of rupees for constructing launching pads, rockets and other instruments needed for satellite projects? So, this investment is in the interest of the nation; and this will help to build capabilities to compete internationally in various fields of science. That way we would develop a large number of capacities ourselves. So, this investment should not be equated with the investments in applied sciences or applied research. It is a case of fundamental research.

SHRI B. J. PANDA: Sir, the second supplementary that I would like to put to the hon. Minister is, whether there are any plans to share information from this observatory with those of other nations who have already reached a certain level of capability.

DR. MURLI MANOHAR JOSHI: Sir, we share information and we get information. As it is case of fundamental research, the information is shared. People from different countries come and work here and share information with us. We share information with them. There is absolutely free flow of information; except, of course, if we get some very classified results. Then it is a different matter. But normally, the research work is shared.

DR. RAJA RAMANNA: Sir, thank you for giving me the floor. I take this opportunity of first congratulating the scientists for setting up this rather difficult and very important piece of modern technology to scan the universe. I have been there myself and it is a very difficult place to go to or to set up and that itself is a tremendous operation. And what is wonderful is to see these pictures which the hon. Minister has shown. These pictures have come from millions of light year away and come clearly to this place, Hanel and are transferred to Bangalore where the people can study it carefully in better conditions. I think it is a thing which we should be very proud of, and that is the first point that I would like to make. Sir, in connection with the comment of hon. Member, Shri Panda, as to whether these things will be useful, I would say that — of course, it cannot be used because meteorology is different from astronomy, but the technology that is being developed can be extended to other things, not necessarily a telescope, but very far off things can be transferred by information, optically, and then by radio to get all the details that one wants in case something happens at a very far off point. All these are things which are technologies of the future, and I greatly welcome all these activities.

DR. KARAN SINGH: I would certainly congratulate the Indian Institute of Astrophysics on this extraordinary achievement. I just wanted to know about the proposal for a Himalayan Binocular Telescope. What exactly is the implication of that, and how will that further expand the ambience of our research?

DR. MURLI MANOHAR JOSHI: Sir, this is again a very sophisticated technology in terms of exploration, reach and outreach and resolutions. This gave us a much better method of studying and exploring all those problems which are being handled today. This is again one step ahead, instead of looking from one eye, now we are looking from both the eyes.

MR. CHAIRMAN: Quesiton Hour is over.